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Cover Page Footnote
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With the relatively recent development of video phones and thus video relay services, sign language interpreters are now exposed to many more deaf and hard of hearing clients who have diverse language backgrounds, use regional signs, and communicate with international callers. Interpreters must adapt to the expanding environment and related language contact phenomena that they encounter because of the invention of videophones. One such phenomenon is the use of regional and foreign or indigenous signs for country names, especially for those countries for which ASL lacks a name-sign.

The research presented in this article is the result of a project intended to benefit interpreters by providing a comprehensive online compilation of country-name signs. A website was created to display both written descriptions and videos of the signs, and so far, signs have been identified for 180 countries along with additional regional lexical variations, yielding a total of 314 name-signs. RID (2005), in the NAD-RID Code of Professional Conduct, encourages interpreters to "stay abreast of evolving language use and trends in the profession of interpreting as well as in the American Deaf community" (p. 3), and this study will help interpreters to do just that.

This investigation was guided by the following research questions: What are the ASL and indigenous signs for each country in the world? What phonological features do they exhibit? Are these features consistent with previous research of ASL? And what patterns do these country name-signs reveal? The purpose of this study was to create a thorough database of ASL and indigenous country name-signs and to identify patterns in their phonological parameters.

Literature Review

Historical Antecedents

Previous research indicates a trend toward abandoning the American signs for countries in favor of the indigenous sign (Lucas, Bayley, & Valli, 2003; Valli, Lucas, & Mulrooney, 2005; Lucas & Valli, 1992). One reason for this phenomenon is *language borrowing* which occurs when two cultures come into contact. Johanson argues for adoption of the term *code copying* instead of *language borrowing,* because the "source language does not give anything up and the receiving language does not give a 'borrowed' item back" (as cited in Thomason, 2001, p. 96). Examples of language borrowing or code copying include ASL's widespread adoption of indigenous signs for "JAPAN, ITALY, CHINA, and AUSTRALIA [which] are the direct result of American deaf people coming in contact with deaf people from those countries" (Valli, Lucas, & Mulrooney, 2005, p. 67). Many other indigenous signs like these have become preferred in the ASL lexicon because they "show respect for different cultures and get away from any ASL signs considered to be racist because of their focus on physical characteristics" (Lucas, Bayley, & Valli, 2003, p. 52-53). The signs for CHINA, JAPAN, VIETNAM, KOREA and other Asian countries formerly initialized at the corner of the ipsilateral eye have now been replaced by indigenous signs that are more politically correct and do not refer to physical features.

In traditional ASL, AFRICA is signed with an A handshape that circles the face and sometimes ends on the nose. Some signers feel that this sign is racist, with its focus on physical characteristics, and some signers prefer the newer sign that traces the outline of the continent [with the 5 to flat-O handshape]. This is not a sign that originated in Africa; rather it seems that one person in the course of a formal lecture proposed it. Recent anecdotal evidence suggests that

both African and African American signers are expressing a preference for the A handshape version that simply circles the face and are rejecting the 'new' sign in part because it closely resembles the sign for a part of the female anatomy (Anthony Aramburo, personal communication). (Lucas, Bayley, & Valli, 2003)

Other anecdotal evidence corroborates this account that African signers themselves, or at least Ethiopians, use the A handshape that circles the face to depict various African countries based on the final location of the extended thumb on the face (Rodney King, personal communication). This point of contact on the face is akin to the location of the country on the continent.

In addition to regional variations, members of different groups may exhibit more prominent use of certain signs than others. Lucas et al. (2003) "found that all of the participants in the young and middle-aged group use the new [country] signs, while some of the older signers still use the old signs" (p. 52-53). Indigenous country name-signs may also be adopted into ASL to supplement signs that ASL lacks. However, this phenomenon is not unique to ASL. Hedberg and the Japan Institute for Sign Language Studies (2003) reported that:

> The trend within the international Deaf community is to try and use the signs actually used and recognized by the national association of the Deaf in each country. For example, the sign for 'Japan', recognized by the Japanese Federation of the Deaf (JFD), is now widely used by Deaf people throughout the world. The World Federation of the Deaf (WFD) also encourages this trend, although WFD also emphasizes that national sign languages are true languages and must be respected – the final decision as to whether to incorporate a country's sign into the national sign language must be made at the country level (p. 6).

Globalization

Globalization has had a large impact on language use in the American Deaf community and abroad. Tomlinson (1999) defines globalization as "the rapidly developing and ever-densening network of interconnections and interdependences that characterize modern social life" (p. 2). Globalization and technological innovation go hand-in-hand, linking us together through multiple modalities. Now with the advent of the Internet and wireless communications, distance can be reduced instantaneously to bring people into close proximity, at least through virtual contact. There are a myriad of communication options available, including text messaging, email, mobile phones, webcams, videophones, instant messenger programs, and relay telecommunications. All of these media connect people from across the world along with those within the same country but from different cultural or linguistic backgrounds. Poster asserts that because of enhanced communication technology, "we are now in a revolution as profound as that initiated by the printing press" (as cited in Keating & Mirus, 2003, p. 693). This revolution is evident to deaf and hard of hearing individuals who use sign language to communicate because they have only recently been united across long distances with the ability to communicate face-to-face. The invention of videophones (VP), webcams, and corresponding Video Relay Services made this revolution for the deaf community possible. Keating and Mirus (2003) assert that:

> for the linguistic minority Deaf community, the Internet is increasing connections among Deaf members who are geographically dispersed throughout the majority hearing community. Internet use also is resulting in the development of new linguistic and sociolinguistic practices and increasing communication across the Deaf and hearing communities. (p. 695)

Language contact through globalization is not a new phenomenon. Linguistically, the spread of languages to other areas across the globe has occurred as a result of colonialism and the influence of growing empires. Lucas (2001) noted this through the example of teachers of the deaf being trained in Germany then returning to Austria and Hungary in the Hapsburg Empire. As a result, the sign languages of these countries are closely related and so are the sign languages of Australia, New Zealand, Britain, India, and South Africa. Along with deaf immigrants to the colonies, "deaf children from all over the former British Empire were educated in Britain and returned to their own countries, bringing their signs with them" (Lucas, 2001, p. 28).

Andersson (2011) describes a pattern in language contact with the mobilization of "Samaritans, deaf leaders, missionaries, and foreign aid workers" who impacted the development and use of various sign languages through their language contact with children in deaf schools. Examples include "Swedish and Swedish-speaking Finnish teachers or missionaries…[who brought] Swedish Sign Language to a Christian-supported school for deaf children in Eritrea" (Andersson, 2011, p. 289). Andersson also describes the phenomenon of British Sign Language, American Sign Language, and Japanese Sign Language being imposed on deaf people either because of the occupation of another country or because of lack of skill in the native sign language already used. In western Africa and several Asian countries, the occupiers, missionaries, or teachers would add "signs from their own country's sign language to the vocabulary of the local sign language or allow deaf children to retain their local sign language but require them to use ASL in school" (p. 289). Andersson cites the actions of Peace Corps volunteers and the efforts of the World Federation for the Deaf (WFD) including the quadrennial World Congress as other vehicles of language contact.

Essentially, modern technology and travel are connecting people all over the world in a way that promotes interaction with various cultural, social, and language groups. This "intersection [is] no longer located in a definable territory" (Jacquemet, 2005, p. 261) so the challenge intensifies in identifying the origin of specific linguistic phenomena. Globalization unites us, but because of the massive amount of information transfer, it is difficult to identify whether a sign is truly of ASL origin, if it was indigenous but became accepted as ASL, or if it is a foreign sign but not from the country itself.

Despite being joined through technology and globalization, cultural groups in various regions remain distinct and may be influenced by increased contact but not assimilated into other people groups. Thus speakers/signers of the same language may exhibit variation in their language use or adopt features of other languages into their own. Woll et al. (2001) enumerate the following reasons for multilingualism in signed languages within a region:

- pockets of minority speakers within the larger society (e.g., Francophone regions of Canada and correspondent use of *la Langue Des Signes Québécoise* [LSQ]);
- deaf individuals scattered across rural areas (e.g., the situation being remedied in Nicaragua);
- distinct cultural groups or communities across a nation (e.g., South Africa and India); and
- separation of girls and boys into different schools for the deaf (e.g., Ireland) (as cited in Lucas, 2001).

Other sociolinguistic variations within a single sign language may stem from differences in age or generation, gender, social class, geography or location, language background and ethnicity of the language users (Lucas, Bayley, & Valli, 2003). All of these phenomena affect what signs are

used today. The following section describes the methods used to identify country name-signs for this study.

Method

This study was conducted in several phases with some overlap for editing and alteration. Phases include: (a) research compilation, (b) website construction, (c) filming, (d) coding, and (e) analysis.

Research compilation

At the onset of this project in July 2009, an attempt was made to locate country name-signs online through Google using different combinations of keywords such as *deaf*, *sign language, sign, country*, and the phrase "*what is the sign for*" in conjunction with the specific country's name. This search revealed two websites that listed some country name-signs, three international online sign dictionaries, and two books published by the World Federation of the Deaf that contained several country name-signs. After documenting these sources and writing an informal description for each sign, a search was initiated for individual country name-signs that were missing from those lists. A few country name-signs were displayed on websites of the various national associations of the deaf around the world. YouTube videos of people signing in their native language and of people signing lists of country signs were also helpful. Moreover, signs were found in two specialized DVDs and a video of sign language curriculum. Lastly, additional signs were discovered through networking, attending workshops and via personal and email communication. Specific resources and methods used to gather country name-signs are shown in Table 1. Throughout this process, an annotated list of references was compiled and updated that indicated which country signs or variations were contributed by each source.

Website Construction

A website was created from the resultant database to showcase the written descriptions of the country name-signs and their references in a unidirectional, bilingual dictionary online. The purpose of the list – searching for a particular country's sign – corresponded with its organization. The signs were sorted alphabetically according to the orthography of English, but not glossed following any transcription notation or formally established glossing system. Instead, a basic description of the signs was used for the convenient access of those unfamiliar with glossing, and links were posted to ASL fingerspelling and dictionary websites as a foundation for those who use a sign language other than ASL. The written descriptions also provide access for individuals who are deafblind and read online text through a refreshable Braille display.

Table 1

Methods and Sources for Gathering Country Name-Signs

Databases and Search Engines	Google, Google Scholar, YouTube, Google Translate
Websites	• The Interpreter's Friend (http://www.theinterpretersfriend.org/indj/cntry/toc.html) • Gambian Association of the Deaf and Hard of Hearing (http://www.gadhoh.com/Sign%20books/book%201/29%20countries%201.jpg) • Uganda National Association of the Deaf (http://www.unadug.net/index.php) • Needs Outreach (http://www.needsoutreach.org/Pages/sign-cntry.html) • YouTube (Alexsalados, Banmoon83, Bowlingnut77, CMcFly, Ecuadordeaf, Gatecomm, Gnarlydork, Kuifje75, Lissethamaya Propertyofranger, RIDOfficialChannel, SebastianBurger, Seekgeo)
Books	• Hedberg, Tomas & Japan Institute for Sign Language Studies. *Países-Sinais.* Retrieved from http://www.cultura-sorda.eu/resources/WFDeaf_Senas_Paises.pdf • Unification of Signs Commission of the World Federation of the Deaf. *GESTUNO: International Sign Language of the Deaf.* Retrieved from http://brett-zamir.me/gestuno/?chapter=Nations
Multimedia	• Granada, José. "Cities, States, and Countries" [DVD]

	• "Signing Naturally," Level 2 [Video Tape]
Dictionaries	• Dutch-Flemish Sign Language Dictionary (http://gebaren.ugent.be/alfabet.php?id=17255) • Arab Indicative Dictionary (http://www.menasy.com/index.html) • Spread the Sign (http://www.spreadthesign.com/gb/)
Workshops	• Bothel, Kelly, & Webb, Alaina. *Social Studies in a Post 9/11 World: Vocabulary and Concepts You Can Use*
Personal Communication	• Anonymous country signs workshop attendee • Bigelow, Tim (ASL interpreter/ASL teacher) • Bonjour, Joseph (ASL interpreter) • Brown, Diane (Deaf) • Bruffey, Elizabeth (Gallaudet Graduate, ASL Interpreter) • Burns, Brent (Deaf) • Cobb, Peggy (ASL interpreter) • Corey, Noreen (Happy Hands School for the Deaf in Equatorial Guinea) • Demant, Aline (Hearing Brazilian, conversant in Brazilian Sign Language) • Dickens, Matt (Deaf) • Downie, Derek (Deaf) • Dunnam, Marie (ASL Interpreter) • Epley, Christina (Deaf, Summer Institute of Linguistics) • Fontaine, Aaron (Deaf) • Hollman, Liivi (Estonian Association of Sign Language Interpreters) • Hudspeth, Tom (Deaf Minister at Lovers Lane United Methodist Church) • Kaiser, Amanda (Interpreter) • King, Rodney (Interpreter) • Mallory, Ruben (ASL interpreter) • Mize, Bree (ASL Interpreter) • Mueller, Katy (Hearing, Teacher of the Deaf) • Nichols, Kim R (Deaf, ASL instructor) • Parks, Elizabeth (Hearing, Wycliffe Bible Translation) • Pfanner, Nancy (ASL interpreter/ASL teacher) • Piersall, Lindsey (ASL interpreter/ASL teacher)

	• Solomon, Jessie (Signs of Love, Honduras) • Takagi, Moeko (Hearing Japanese, conversant in Japanese Sign Language) • Umberger, Larry (Deaf) • Walker, Julie (ASL Interpreter) • Wrzesinski, Lori (ASL interpreter/ASL teacher)

Filming

Because of the visual modality, use of space, and non-manual morphemes used in sign language, written descriptions were augmented with video clips to show the actual production of the signs in a way that illustrations and text cannot. Two sign language interpreters volunteered to demonstrate the signs on video and to assist in the recording process. During the first round of recording, a digital camera with video capabilities was used to record separate video files for each sign. Throughout this process the primary sources were continually reviewed to check for accuracy of sign production. Each video was then uploaded to the website and linked to the country it represented. As more signs were discovered and the website was reviewed for revision and editing, a second round of recording began to improve the video quality and correct any inaccuracies. Again, to verify accurate sign production while recording, primary sources were referred to instead of solely depending on individual written descriptions. In the second round of recording, a digital video camera was used to create the recordings. Afterwards, the main recording was edited into separate files and the ambient sound was removed. These files replaced older ones or were uploaded as new files onto the website and linked with their respective countries.

Coding

After compiling the information for the website, the individual country name-signs and all their variations were codified to identify features including: origin, typology, contact, handshape(s), single/double handshape, location(s), symmetry condition, dominance condition, metric restrictions, and executions/beats. During coding, a few questionable items surfaced that altered the requirements for classification (e.g. the 1 versus G handshapes, signs produced in open space with no contact but at the head level, executions or beats with internal repetition). Since more signs are continually surfacing and being added to the website, only signs from July 2009 to May 2011 were included in the codification process. New signs found after that point were not codified but were posted on the website for the benefit of viewers. The coding process began by entering data about each country sign and variation into a Microsoft Excel spreadsheet.

The origin of the signs was also codified; however, it was difficult to accurately distinguish ASL signs, indigenous/foreign signs, and signs which are foreign but have been adopted into ASL. As discussed in the literature review, regional variations and increased contact through globalization make foreign signs more commonplace, so their origins are difficult to pinpoint. Signs that are most commonly recognized and produced by native ASL users were labeled as ASL. Unless it was specified that a particular country uses a sign, all foreign signs were considered "indigenous" -- either the native sign of that country itself or the signs used by other countries. The statistics showing how many signs are ASL and how many are indigenous should be considered a tentative approximation, but can still be useful in comparing the ratio of ASL to foreign country name-signs.

Johnston (2003) conceded that "lexical variation – the use of completely different signs by different signers for the same meaning – appears to be the primary cause of concern for some sign lexicographers" (p. 439). Johnston was also concerned with "phonological variation – the

occurrence of different forms of the 'same' sign (e.g., using different handshapes or movements) by different signers" (p. 439). Because of this, both lexical variation and phonological variation were documented in the description and video clips of the country name-signs.

Parameters were based on the classification work of Battison (1978) and included typology, contact, handshape(s), location, symmetry condition, dominance condition, metric restrictions, and iterations. In his seminal work, Battison described parameters needed to analyze signs. Overall the analysis for the present study was based on Battison's definitions with slight modification. The typologies may be defined as follows:

Type Ø – One-handed signs articulated in free space without contact;

Type X – One-handed signs that contact the body in any place except the opposite hand;

Type 1 – Two-handed signs in which both hands are active and perform identical motor acts; the hands may or may not contact each other, they may or may not contact the body, and they may be in either a synchronous or alternating pattern of movement;

Type 2 – Two-handed signs in which one hand is active and one hand is passive, but both hands are specified for the same handshape;

Type 3 – Two-handed signs in which one hand is active and one hand is passive and the two hands have different handshapes (Note that signs which were excluded specifically in Type X fit in Types 2 and 3 - one hand contacts the other); and

Type C – Compounds that combine two or more of the above types. (Battison, 1978, pp. 28-29)

Contact locations were categorized into areas at the head, trunk, arm, hand, or below the trunk and signs were documented to have a single location or multiple locations. Because a signer may be left or right hand dominant, the side of contact (if any) is referred to as *ipsilateral*

(same side) or *contralateral* (opposite side) for clarity. Signs were also coded for satisfaction of the dominance condition and symmetry condition. The symmetry condition states that

> (a) If both hands of a sign move independently during articulation, then (b) both hands must be specified for the same location, the same handshape, the same movement (whether performed simultaneously or in alternation), and the specifications for orientation must be either symmetrical or identical. (Battison, 1978, p. 33)

The dominance condition requires that

> (a) If the hands of a two-handed sign do not share the same specification for handshape (i.e., they are different), then (b) one hand must be passive while the active hand articulates the movement and (c) the specification of the passive handshape is restricted to be one of a small set: A, S, B, 5, G, C, and O. (Battison, 1978, p. 35)

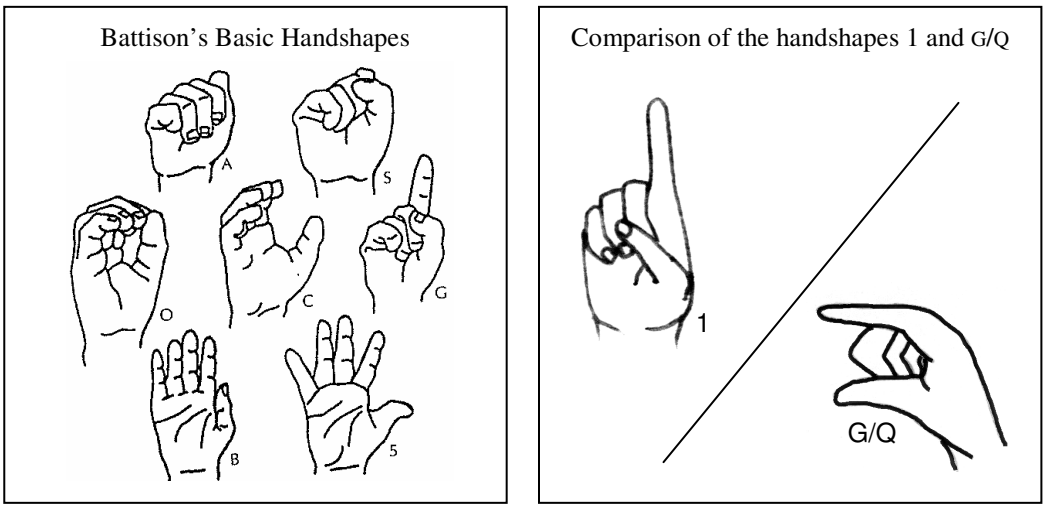


Figure 1. Battison's basic handshapes and a comparison of contemporary handshapes 1 and G/Q. Adapted from *Lexical Borrowing in American Sign Language* by R. Battison, 1978, p. 35. Reprinted with permission.

Battison's original small set of the most natural basic handshapes included the handshape G but his illustration showed the 1 handshape. This affects the outcome of the present study, so after informally surveying multiple interpreters and observing usage by deaf signers, it was determined that contemporary signers distinguish between the two handshapes; thus the 1 handshape from Battison's small set and G/Q were coded separately. It is a significant observation that the handshape that previously was illustrated and signed for G (a fist with the index finger extended) is now signed for the number 1 and a different handshape (both index finger and thumb extended) is now used for the letter G/Q (See Figure 1).

Other handshapes that appeared in the collection of country name-signs were: D, 13, 2/V, 20, 25, 3, 4, 8, bent 5/claw, bent B, bent V, closed G, "cuckold," E, extended bent V, F/9, G, I, K/P, L, M, modified C, modified X, N, NO, R, T, U/H, W/6, X, Y, and a handshape not found in ASL (See Table 2). The handshape used in the sign for Namibia was coded as not being found in ASL; however, it was later found to be used in a single regional sign at the Oklahoma School for the Deaf that means "too bad" or "it's your fault." (Joey & Stephanie Soto, Personal communication) This is the only sign known in the scope of this research that uses that particular handshape. And secondly, the handshape used for TURKMENISTAN is used as a symbol for Boy Scouts so it may be seen in signed communication but is not ASL. Signs were identified as having a single handshape, double handshape, or more than two handshapes. The latter does not satisfy the metric restriction that states: "two is the upper limit of complexity for the formation of signs. No more than two different locations and no more than two different handshapes [may be used]" (Battison, 1978, p. 48). Signs were also coded for single or double executions/beats, which Battison defines as:

> the production of the basic specified units of the sign -- its location, handshapes, orientation, and movements all in one bundle (some of these locations or handshapes may be doubled or complex). Thus a single execution or beat is one complete cycle of a sign, with no part of it being repeated. Some signs require internal repetition (p. 53).

Analysis

After the coding process was complete, pivot tables in Microsoft Excel were used to analyze the data. Pivot tables with the following relationships were created:

- side of contact and origin
- side of contact and location of contact
- typology and origin
- symmetry condition and origin
- dominance condition and origin
- metric restriction and origin
- execution/beats and origin
- handshape and origin
- basic handshapes (7) and dominance condition
- handshape, double handshape, and single handshape

This was followed by opening specific data portions of the pivot tables to examine the data categorized and verify its validity. For instance, many of the signs were labeled as not satisfying metric restrictions because they used more than two handshapes. However, upon further investigation, these signs could be categorized based on why they did not satisfy the metric restriction (compound signs, use of fingerspelling, and having a different handshape for the base hand). Statistics were only calculated for those signs that had no other reason for

breaking the metric restriction. The same investigation was conducted for signs having a second location that revealed the reason for that label was that many were actually compound signs.

Results

According to Battison (1978), a true ASL sign can possess a maximum of two handshapes. This is significant in regards to the acceptance and use of indigenous country name-signs that possess more than two handshapes. Of the 314 signs and variations analyzed, 20 (6.37%) incorporate more than two handshapes. However, despite technically breaking the metric restriction for a limit of two handshapes, some of these signs are acceptable in ASL for the following reasons: 1) the base sign is different from the two handshapes the dominant hand used; 2) a combination of handshapes is used for compound words/signs; 3) signs incorporate fingerspelling; and 4) the name-signs are actually extant signs in ASL but with different semantic properties. The remaining signs contain more than two handshapes in a sequence that is atypical of ASL (PAPUA NEW GUINEA$_1$, NEW CALEDONIA, KUWAIT$_2$, and IRELAND$_3$). More than half of the handshapes used in country name-signs (54%) are comprised of the seven most natural and basic handshapes identified by Battison. The handshape B occurs most often, totaling 14.42% of all handshapes analyzed, which may be due in part to its tendency to serve as a non-dominant base hand for bimanual signs. The 5 handshape came in next with 8.01%, followed by the 1 handshape and the S handshape tied at 7.32%. The A handshape is used in 6.41% of all signs and the O handshape in 6.18% of all signs. The last basic handshape, C (4.35%), actually occurs less frequently than U/H (5.03%), a non-basic handshape.

Keating and Mirus (2003) report "the majority of signs are made in the neck or head area (though this has changed over time)" (p. 697). This observation is true for country name-signs

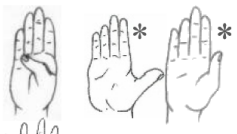
with 44.72% being produced in the head region. Following that is 32.92% on the hand and 16.46% signed at the trunk. Only 1.86% are signed below the trunk and 3.73% on the arm.

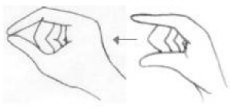
Several interesting findings revealed patterns and anomalies concerning the movement and location of contact.

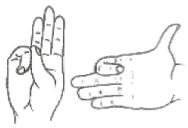
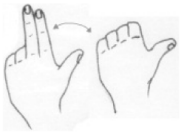
- Most signs are made with no contact or in free space (51.27%), followed by 17.83% having center contact and 17.2% having ipsilateral contact.
- Signs with a second location only occur on the head or hand and in the center, ipsilaterally, or in free space. Of the eight signs with a second location, five are due to being a compound sign.
- BURKINA FASO is the only sign that occurs contralateral to ipsilateral on the arm. ISRAEL is the only sign that occurs with ipsilateral to contralateral contact. GUYANA is the only sign made below the trunk with no contact. SAMOA is the only sign made with contact at the neck.

Table 2

Frequencies of Handshapes used in ASL and Indigenous Country Name-Signs

%	Name	Handshape
14.42	B	
8.01	5	
7.32	1	
7.32	S	
6.41	A	
6.18	O	
5.03	U/H	
4.35	C	
3.20	Modified C	
2.97	2/V	
2.97	G/Q	
2.75	Modified X	
2.06	Bent B	

%	Name	Handshape
2.06	F/9	
1.83	Bent 5/claw	
1.83	L	
1.60	K/P	
1.60	N	
1.37	4	
1.37	Bent V	
1.37	E	
1.37	M	
1.37	R	
1.37	X	
1.14	20	
1.14	I	

%	Name	Handshape
0.92	D	
0.92	3	
0.92	NO	
0.92	T	
0.92	Y	
0.69	8	
0.46	Not ASL	
0.46	25	
0.46	Cuckold	
0.23	13	
0.23	Extended bent V	
0.23	W/6	
0.23	Bent W/6	

*Variant

One hundred percent of the applicable signs analyzed satisfy the symmetry condition and the rest are not applicable to the required conditions. Nearly all applicable signs follow the dominance condition (99.68% of all analyzed signs or 97.96% of applicable signs) with the one exclusion of the Polish sign for ANTARCTICA which is technically a continent and not a country.

In regards to typology of the signs, Type X signs dominate with 40.13% followed by Type 1 with 21.02% and Type Ø with 17.2% (See Table 3). Table 3 also illustrates that ASL has signs for only approximately 27% of the 180 identified country name-signs or 25% of all 194 nations by the U.S. Department of State (2011). This means that approximately 73% of country name-signs are indigenous and of those indigenous signs, an estimated 8% have been adopted into ASL.

Table 3

Typology and Origin of Country Name-Signs

Count of Typology	**Typology**						
Origin	Type 0	Type 1	Type 2	Type 3	Type C	Type X	Total
ASL	8	7	1	8	4	21	49
Indigenous	41	55	8	33	6	94	237
Indigenous to ASL	4	3	0	3	2	8	20
Uncertain[a]	1	1	1	1	1	3	8
Grand Total	54	66	10	45	13	126	314

Note. [a]Country signs for which the origin is uncertain include: AFGHANISTAN$_1$, AFGHANISTAN$_2$, and AFGHANISTAN$_3$, AFGHANISTAN$_5$, AFGHANISTAN$_7$, DOMINICA, LUXEMBOURG$_2$, and NEW ZEALAND.

Discussion

Interpretation

Handshape

Approximately twenty-five signs in this study (14.42%) used B as base hand. Mandel (1981) refers to Stokoe's (1965) work with the Dictionary of American Sign Language on Linguistic Principles (DASL) and his findings about base handshapes.

> Most of the base hands in DASL with focus on the back of the hand are not spelled with any specific handshape…. The hand… is usually relaxed…. The relaxed handshape may alternate with A, B, or an assimilated handshape equal to that of the dez [handshape]. (p. 147)

Thus, handshape analysis of bimanual heterocheremic country name-signs with a stationary base hand may be slightly skewed in the current study.

In regards to the metric restriction, signs with more than two handshapes may be cumbersome and awkward to ASL users, and thus altered or disregarded in favor of a more fitting name sign. Overall a striking majority of both ASL and indigenous country name-signs satisfy the metric restriction for a maximum of two handshapes. Siple's (1978) observations indicate logical, linguistic reasons for the evolution of this ASL rule and can explain the high concentration of signs produced at the head region in the present study. Siple posits that in the regions of higher acuity, differences in fine detail such as "position, motion, number of fingers and overall handshape" (p. 101) are more important because they can easily be detected in such areas. "Fine detail can be seen on the signer's face and in the zone around the face" (Siple, 1978, p. 100), so this becomes the location where signers fix their gaze. Furthermore, in areas of low visual acuity further away from the face, there should be signs with simpler handshapes, more two-handed signs, more internal redundancy (Siple, 1978). Siple's observations relate to reasons for trends in location of sign production as well.

Location

According to Mandel (1981), "the back of the head is never a location…though [it is] used in other sign languages" (p. 11). This is demonstrated in the indigenous sign for LAOS, which is signed by tapping the fingertips of the 5-claw on the back of the head ipsilaterally, and the sign for PERU, which can be signed with a U or V tapping on the back of the head. The fact that ASL does not use the back of the head as a common location could explain why two other variations exist in the sign for PERU (a P or V tap palm-out on the forehead) that conform more to ASL location restrictions. Mandel's assertion that the back of the head is *never* a location does not consider exceptions. ASL does, albeit rarely, incorporate the back of the head location for a few signs such as SUBCONSCIOUS (fingertip of X taps ipsilaterally on the back of the head) and TO-REMEMBER-FOR-LATER (fingertips of flat O touch forehead then move around ipsilaterally to touch the back of the head).

Movement

"In contact situations involving spoken language, words are borrowed from one language into another and undergo phonological, morphological, and semantic restructurings" that make them more compatible with the structural properties of the borrowing language (Battison, 1978, p. 105). The current study reveals that ASL – which tends to add a double movement to signs – has altered the adopted indigenous signs so that those that are supposed to only have one beat may in fact be incorrectly executed twice by an ASL user. Wilson (2001) confirms the propensity for "short signs in American Sign Language [to] frequently use a double-tap movement" (p. 48). It can be speculated that the tendency for a double motion in ASL stems from the noun-verb pair rule documented by Supalla and Newport (1978) that dictates that reduplication of the verb form of a sign results in a noun (as cited in Valli, Lucas & Mulrooney, 2005). Furthermore, Battison establishes that "while there are signs which are limited to one beat

in unmarked contexts, the signs which require at least two beats have no absolute limit on the actual number of iterations" (p. 54). Therefore, signs coded as double execution may actually have multiple beats if the motion is repeated more than twice. To check for accuracy in beats during codification an attempt was made to locate the primary, indigenous source of a sign and not its secondary reproduction.

This feature of lexical borrowing could also affect the accuracy of the statistics in the analysis. For instance, the Lengua de Señas Mexicana (LSM) sign for MEXICO is produced with the palm-down 2/V handshape touching the forehead at the index finger then and moving diagonally down and forward once; however, ASL has adopted this sign and modified it to fit ASL tendencies by adding a double movement of the same base sign. Thomason (2001) describes how this phenomenon parallels spoken language when English speakers adapt the pronunciation of French loan words to native English sounds in words such as *chaise longue*, *hors d'oeuvre*, and *bonbon*. In these cases, the French r is replaced by the English r, and nasal French vowel phonemes are replaced with "English sequences of vowel + nasal consonant" (Thomason, 2001, p. 72). Thomason goes on to explain that "in American English, words such as *croissant* or *spaghetti* are phonologically integrated: their phonetic realization in American English is different than it is in French or Italian. Such cases are called loanwords by some researchers" (as cited by Lucas and Valli, 1992, p. 27).

This process can be likened to what occurs with adopting an indigenous country name-sign into ASL. Just as English speakers do not pronounce *croissant* the French way but accept the word into their use of English, so can country name-signs undergo alterations to adapt to the constraints of ASL and be accepted by ASL users (e.g. the addition of a double movement by ASL users signing RWANDA, THAILAND, GERMANY, and GUATEMALA). On the other hand, the

phenomenon of adopting an indigenous country name-sign into ASL is unlike the phonological integration process that Lucas and Valli (1992) describe. For instance, although the phonological parameters that make up the *Lingua Italiana dei Segni* (LIS) sign for ITALY have parameters also permitted in ASL (the sign's particular segmental structure, handshape, palm orientation and location), phonological integration does not necessarily occur because of adoption of the entire lexical item (Lucas & Valli, 1992).

Limitations and Future Research

Thomason (2001) reiterates "some words can only be suspected, but not firmly established, as loanwords because no source language can be found" (p. 91). Because widespread global language contact has compounded this problem, a limitation in the present study is that it is difficult to derive the origin or source language of signs and to distinguish ASL from indigenous signs. As a result, some signs may actually be indigenous but labeled incorrectly as ASL or vice versa. This limitation illustrates the need for further research into the origins and etymologies of country name-signs and to identify whether they are mostly descriptive, arbitrary, or combination name-signs under Supalla's (1992) classification of the personal naming system in ASL. Based on informal observations, it seems that many country name-signs are descriptive and representative of national flags, country borders/shapes, leader's characteristics, and geography/topography. However, more research is needed to determine whether there truly is a trend toward descriptive or arbitrary name signs for country names.

Another limitation of the study was the lack of an additional person to corroborate codification of the data. This limitation could easily be addressed by including multiple researchers in the coding process in future studies. In regards to location and contact, further

studies might focus more on specific regions of bodily contact such as forehead, temple, shoulder, wrist, etc.

Implications for Interpreters

The Registry of Interpreters for the Deaf (2005) indicated in their Code of Professional Conduct that interpreters should use "language most readily understood by consumers" (p. 3). Therefore, applying this to the utilization of country name-signs should cause interpreters to consider whether fingerspelling the country's name, using the old ASL sign, introducing an indigenous sign, or employing a combination of these would be most appropriate to the situation. Humphries and MacDougall (1999-2000) describe the *chaining* and *sandwiching* processes that should be used when introducing new country name-signs. They defined *chaining* as "a technique for connecting texts such as a sign, a printed or written word, or a fingerspelled word" (p. 90) used in combination to convey a concept. To employ chaining, for instance, an interpreter could fingerspell the country name, point to it on a map or in print, sign it, and then fingerspell the name again. Kelly (1995) and Fischer and Janis (1990) describe a similar technique, *sandwiching*, in which "signs and fingerspelled words are alternated" (as cited in Humphries & MacDougall, 1999-2000, p. 90). An interpreter using the sandwiching technique to introduce a new country name-sign would fingerspell the country's name, use the sign, and then fingerspell it again.

Interpreters serve as a vehicle of language transmission as they incorporate indigenous country name-signs into their interpretation, exposing deaf people to new signs who may in turn share these signs with the Deaf community. Likewise, the signs that the Deaf community uses for country names may spread and interpreters can pick up on these signs, further expanding their usage. Interpreters should also be aware of *lexical innovation* that occurs when "someone

thinks up a new word and introduces it, then if it catches on, eventually spreads throughout the community" (Thomason, 2001, p. 135). While lexical innovation may be appropriate in certain situations, interpreters should remember that they hold a position of power in regards to communication facilitation, and this power should not be abused. Creating signs when one does not exist or is unknown does not serve to empower deaf clients, although it may be beneficial to establish temporary signs with a client in situations where certain words are repeated frequently. Lexical innovation must occur as technology progresses, new inventions are released, and social phenomenon evolve; however, when novel words are needed to fill the gap for new concepts, it is the Deaf community's right to develop signs that will be accepted in their region or country.

Global Impact

An international standardization for country name-signs is lacking because of:

> the discontinuous nature of signed language transmission at the generational level (Hoffmeister and Wilbur, 1980; Newport and Meier, 1985; Strong, 1988; Singleton and Newport, 1994), [and] the enormous degree of variability and competence in the language across signing communities (Lucas and Valli, 1989; Lupton and Salmons, 1996; Hoopes et al., 2001). (as cited in Johnston, 2003, p. 437)

Nevertheless, access to the country signs website has the potential to make a global impact. Lucas (2001) recognizes that sign language dictionaries "can have a substantial impact upon the status of sign language and what is accepted as a distinct sign language. Signs that are included in dictionaries are more likely to be accorded high status and be in more widespread use" (p. 21). It is unlikely that this compilation of country signs will significantly impact heritage ASL signers' overall use of the language; however, the indirect consequences of having these signs consolidated in one location will allow signers all over the world to learn country name-

signs, which in turn affects the quality of interpreting, education, and communication for the deaf.

Day and Sutton-Spence (2010) describe the British Sign Language naming system – another structure that has the potential to be impacted by the country signs website. People entering the British Deaf community may be given a name-sign representative of the country from which they hail or of the country from which their spoken name originates. Day and Sutton-Spence exemplify this through their observation of a deaf girl from the Czech Republic being given the sign name CZECH-REPUBLIC and another woman (whose name was obviously French) being assigned the name-sign FRANCE. This cultural practice indicates that the global access to a consolidated resource online might allow for more widespread use of country signs that impact the pool of name-signs assigned to those involved in British Deaf Culture in particular.

With additional research, even more signs and variations can be added to the country name-signs website, and as signers from different countries continue to interact, language contact will influence the lexicons of the many sign languages across the globe. In summary, while the analysis in this study was conducted at the micro-level in order to determine the patterns in phonological elements and parameters of country name-signs, the effects of this research could be far-reaching on a macro scale, impacting language use of interpreters, teachers in the classroom, and deaf people throughout the world.

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